

# Water Board Basics: Keys for Success

## The Meter Replacement Program

Water utilities are businesses that receive money for making a product. It's really that simple. A water utility produces water and sells it to its customers. To produce water, a utility provides potable, palatable and wholesome water at an adequate pressure and quantity, 24-hours-a-day.

### Water Meters

Efficient water utilities charge customers for the amount of water used monthly at a rate sufficient to cover all expenses. A water meter is used to measure the amount of water delivered. The meter usually measures in gallons or in cubic feet. Most utilities charge customers in 1,000 gallon increments.

Water meters are important and serve several purposes. A water meter can measure how much water is produced from a spring or well, how much water is delivered from that spring or well to a storage tank or how much water a neighborhood uses. More importantly, water meters can measure how much water each customer uses and are the "life blood" of the utility.

For metered systems, the water meter is the cash register. Residential metered usage can make up 25 percent to 75 percent of the

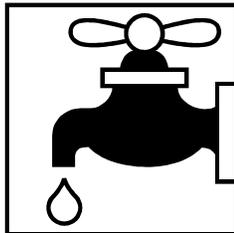
utility's annual income. If the utility's meters are old and under-register the amount of water delivered to the customer, the utility makes less money. In fact, the utility *loses* money when meters under-register. How? Because the utility spent money to provide water to the customer's meter, in the form of electricity, chemicals and salaries. How much money can a utility lose from under-registering meters? See the chart on the back of this fact sheet for the value of unregistered water.

### Meter Replacement

Every board of directors will be asked to justify a meter replacement program. Let's justify one for a Nevada utility, named Goldville, which has never had a meter replacement program. Goldville Utility is 12 years old; it has 120 meters in the system; and 10 of its meters are registering 20 percent slow.

The customers of these 10 slow meters use 10,000 gallons per month each and are charged \$1.75 per 1,000 gallons of water. Using the value of unregistered water, Goldville is receiving \$35 per month less income than it should. This amounts to \$420 annually!

The cost of a new meter ranges from \$35 to \$65 each, so let's use \$45 for our example. Goldville buys 10



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## *Keys for Success: Meter Replacement Program*

new meters for \$450. Let's assume Goldville's operator makes \$9 per hour, it takes two hours to replace each meter, and the operator replaces all 10 meters. It will cost Goldville \$180 in labor to replace the meters. Therefore, the total cost (new meters and labor) is \$600. When we take this \$600 expense and subtract the annual loss of \$420 in revenue, we see that Goldville has "lost" \$180 over the course of the year. If this were really the case, utilities would never replace meters!

The fact is that meters generally don't under-register all at once. They become inaccurate gradually. Assume that Goldville's 12 year-old meters started reading slow in their ninth year. When we use a straight line to show the accuracy decline of Goldville's meters over this three-year period, we see that the lost income is \$69.30 for each meter. Goldville lost \$693 over the three-year period. The cost of meter replacement project is \$630. Goldville is now ahead \$63.

When should you replace water meters? First, review the manufacturer's warranty. If the manufacturer warranties the accuracy of the meter for 10 years, replace the meter before the tenth year. If the manufacturer states the meter will be accurate for one million gallons, replace the meter at or before this usage.

Successful small utilities believe that the meter is their cash register and use aggressive meter replacement programs. Some replace their meters when 75 percent of the manufacturer's warranty is reached.

If a utility has never had a meter replacement program, its board of directors could begin one by requesting that the operator replace the 10 oldest meters in the system or replace the 10 highest meter readings.

Either way, the meter replacement program is off the ground and the utility will realize more income. More importantly, the utility will not be losing its hard-earned income.

### The Value of Unregistered Water

Unregistered Water	Monthly Water Rate								
	\$1.25 per 1,000 Gallons			\$1.50 per 1,000 Gallons			\$1.75 per 1,000 Gallons		
	10,000 Gallons used	25,000 Gallons used	50,000 Gallons used	10,000 Gallons used	25,000 Gallons used	50,000 Gallons used	10,000 Gallons used	25,000 Gallons used	50,000 Gallons used
2 %	\$0.25	\$0.63	\$1.25	\$0.30	\$0.75	\$1.50	\$0.35	\$0.88	\$1.75
4 %	0.50	1.25	5.00	0.60	1.50	6.00	0.70	1.75	7.00
6 %	0.75	1.88	7.50	0.90	2.25	9.00	1.05	2.63	10.50
8 %	1.00	2.50	10.00	1.20	3.00	12.00	1.20	3.50	14.00
10 %	1.25	3.13	12.50	1.30	3.75	15.00	1.75	4.38	17.50
12 %	1.50	3.75	15.00	1.80	4.50	18.00	2.10	5.25	21.00
14 %	1.75	4.38	17.50	2.10	5.25	21.00	2.45	6.13	24.50
16 %	2.00	5.00	20.00	2.40	6.00	24.00	2.80	7.00	28.00
18 %	2.25	5.63	22.50	2.70	7.25	27.00	3.15	7.88	31.50
20 %	2.50	6.25	25.00	3.00	7.50	30.00	3.50	8.75	35.00



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